

# EARLY NATURAL HISTORY OF A FORESTED AREA NEAR DOVER, OHIO<sup>1, 2</sup>

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## ABSTRACT

A 41.5-acre area set aside for forestry research in Tuscarawas County, Ohio, is described, based on early-resident interviews, literature review, and comparisons with adjoining areas. Vegetational composition has not drastically changed since those early days, but frequency and ecological dominance have become modified.

The area was first cut in 1900, was grazed through 1930, was burned in the mid-1930's, and was modified by forest management practices in the 1940 s. Animal populations have changed, since the time of the first white settlers (1761), due to modern land uses, for agriculture, wood products, and hunting. Understanding the history of a research area allows more valid interpretation of observations made in the area and will aid in problems of prediction of ecological phenomena.

A description of the early biological or natural history of an area, besides being of general interest, provides important information about the area. It helps explain its present status and appearance, reveals some important ecologic factors which formerly affected the area and may still affect it. Early history indicates conditions which influence the response of the area to treatment and evaluation. Whether such a history can provide measurable variables, that can be studied, correlated with reliability, or interpreted with any degree of statistical confidence, is doubtful.

This brief study of a forested area near Dover is based on early resident interviews, literature review, and comparisons with adjoining areas. It is presented to provide an ecological background for the area so as to make possible more critical evaluation of future ecological observations made there and perhaps may, some day, with advanced technology and understanding, refine the interpretation of future research studies there.

## LOCATION

The 41.5-acre study area is located within a 160-acre U. S. Forest Service research area for watershed management owned by the Muskingum Watershed Conservancy District. The area is located in unglaciated Ohio, in Fairfield Township, Tuscarawas County, Ohio (T.9N, R.1W, Secs. 4 and 5 of the U. S. Military Survey) (described by Peters, 1930: 251-265), on land formerly known as the Krantz property. The approximate center of the area is intersected by lat 40° 34' 75" and long 81° 24' 75" and is 6.5 miles N of Dover, Ohio, and 1.5 miles by road northwest of Dover Dam.

The watersheds of two small perennial streams constitute the study area. The streams join at the boundary of the area and flow into the Tuscarawas River one-half mile below their junction. Slopes of the watershed range from 5 to 50%. The elevation is from 290.17 m (952 ft) to 354.48 m (1163 ft), a difference of 64.31 m (211 ft).

## EARLY VEGETATION

In the diaries of the settlers and missionaries, there are no references to the specific area studied. The original character of the land and its flora, fauna, and native human populations, as reported below, were deduced from statements

<sup>1</sup>This study was supported by the U. S. AEC contract AT (11-1)-967 (1960-63) and the Ohio Cooperative Wildlife Research Unit, Columbus 10, Ohio. The study area was that used by the author for research toward his Ph.D. dissertation. (Giles, 1964).

<sup>2</sup>Manuscript received October 30, 1964.

about nearby areas and from observations made on the area itself. Botanical names suggested in this paper are based on Fernald (1950); faunal names used later are based on Miller and Kellogg (1955). Names in brackets are the author's interpretation of the species suggested in the literature.

From Lake Sandusky (perhaps Sandusky Bay) to Tuscarora, an Indian village at the junction of Sandy Creek and the Tuscarawas River (now the town of Bolivar), six miles northwest of the study area, there were no pines (*Pinus*); the timber was white, black, and yellow oak (*Quercus alba*, *Q. velutina*, and perhaps *Q. rubra*); black and white walnut (*Juglans cinerea* and *J. nigra*); "cyprus" (perhaps *Thuja*); chestnut (*Castanea dentata*); and honey locust (*Gleditsia triacanthos*) (Taylor, 1854: 125). James Smith (Taylor, 1854: 106) recorded in his diary, while on a hunting trip to the east branch of the Muskingum (the Tuscarawas River) in 1756-57, that "the land here is chiefly second and third rate, and the timber is chiefly oak [*Quercus*] and hickory [*Carya*]." John Heckewelder, a Moravian missionary, who was one of the most active and observant American travelers in the eighteenth century, wrote that "in places the oak and hickory grow and groves of ash [*Fraxinus*], chestnut, and maple [*Acer*] flourish comparatively free of underbrush" (Wallace, 1958: 216).

On Boquet's Muskingum expedition in October, 1764, he described an area four miles northwest of the study area. Here the river was 100 yards wide at the time. "Fine level country extended from a high bank some distance back producing stately trees free from underwood and with plenty of food for cattle" (Taylor, 1854: 147). Chestnut trees grew large enough for canoes to have been made from them (Taylor, 1854: 107). Horse-chestnuts or buckeyes (*Aesculus glabra*) were noted in 1789 (Wallace, 1958: 246). Heckewelder spoke of bringing down from the highlands cedar wood (perhaps *Thuja*) for the purpose of making tubs and like articles for the Indians (Wallace, 1958: 64). Mansfield (1884: 335) noted that settlers used chestnuts, hazelnuts (*Corylus*), walnuts, butternuts (*Juglans cinerea*), hickory nuts (*Carya*), May apples (*Podophyllum peltatum*), and pawpaws (*Asimina triloba*). Huckleberries (*Vaccinium*) grew on the hills. Strawberries (*Fragaria*), raspberries, blackberries, dew berries (*Rubus*) and, in a few places, cranberries (*Vaccinium*) were present. Ginseng (*Aralia*) abounded and was hunted by both whites and Indians for sale. Near Tuscarora, the Moravian missionaries obtained a few vegetables from the forest; nettles (perhaps *Urticaceae*) grew in the bottoms (Taylor, 1854: 191).

Mr. Albert A. Heid, an 85-year-old resident of Strasburg, Ohio, was interviewed by the author in the summer of 1961. He was the youngest of 14 men who had logged a tract of timber near Zoar on Middle Run about 3 miles northwest of the study area. During the three years, 1891-93, this group of men, working for the Kirkland Weatherspoon Company of Pittsburg, had cut out 2,000 acres of timber in the vicinity. Also interviewed was John Lengler, 87-year-old resident of the Old Zoar Road near the study area, who had logged in the vicinity 70 years ago (about 1895). These two men described the soil as very deep and black, the ground covered with May apples and ferns, but with few "flowers." Ginseng was plentiful and much hunted. There were only a few briars, probably catbriar (*Smilax* spp.), and very little underbrush. There had been no detectable fires up to the time that Mr. Lengler saw the area although, nearby, careless brush burning and fires set maliciously had destroyed many timbered areas. In the area worked by Mr. Heid, there were no openings except for a marshy area in the otherwise closed-canopy forest of predominantly white oak. There was some red oak (*Q. rubra*), some pin oak (*Q. palustris*), few walnuts and hickory, very few chestnuts, only a few cherry (*Prunus*), which were not normally cut, some sassafras (*Sassafras albidum*), and several groves of quaking aspen (*Populus tremuloides*) trees which grew to 16 in. dbh (diameter breast high). Mr. Lengler reported many chestnuts, an indication of the variability of the mature forest

even within the area worked by the two men. Within the areas of Mr. Lengler's work, chestnuts and red oaks were predominant. There were no pines or evergreens, but there was "quite a bit" of ironwood (*Carpinus caroliniana*) and only occasional dogwoods (*Cornus florida*); the few tulip poplar (*Liriodendron tulipifera*) that were present were very large and of good quality. There was much "moss" or lichen on old but small trees.

Most of the timber was of high quality and defects were rare. Predominant sizes of timbers cut by the two-saw mill at Middle Run, which were used for ship and bridge timbers, was 12 in. x 16 in. x 36 ft and 12 in. x 12 in. x 18 ft or 24 ft. Mr. Lengler reported ship timbers 60 or 40 ft long and 10 in. square being cut frequently. Four to six horses were required to get the large trees to the mill to be sawed. The smallest trees that were cut were 14 in. dbh, but were very straight and limbless. Many of the limbs of the larger trees were sawed for lumber. The amount of brush and work required to limb trees and to clear them for horse skidding to a tram-car road determined whether they would be taken or left to rot after they were felled. Tops and frequently entire trees were left.

Mr. Heid remembered an 8-ft crosscut saw to which an additional piece of saw blade had been welded to make it long enough for cutting some trees. Twenty-eight-inch wide, clear white oak boards were frequently produced. A 4-ft-dbh tree was considered "good," indicating prevalence of tall but not necessarily large-diameter trees.

The vegetation of the area in which Mr. Heid worked, less than one mile from the research area, was examined by the writer after the interview and was found to be very similar to that of the study area. Species composition had not drastically changed within the past century from that reported. Present-day observations of the vegetation in the study area (Giles, 1964: 31-35) and in surrounding areas support the recollections of these two men and give weight to their reports.

Since settlement of the county and the period reported on by the men interviewed, forest utilization in the vicinity of the study area has been primarily for mine props, building, and tan bark. A commercial clearcut was made over both study-area watersheds about 1900. Only accidental grazing has occurred in the forest since the mid 1930's. Mr. Lengler reported that pasturing of sheep, cows, and pigs in the forests was common and, without fencing, few forests went ungrazed; old bones of a cow were found on the research area. In the summer of 1946, foresters cut grapevines (*Vitis* spp.) throughout the area. An "improvement" cut was made in 1948, when 12 to 15 hundred mine props were sold. Many were left, and small, scattered piles of rotting props are still evident on the area. Defective trees were removed, as were hop hornbeam (*Ostrya*), dogwood, and others. Logging was also done in the fall of 1949 when merchantable timber high on the ridges was removed. There were fire scars throughout the area; these were ground fires which occurred prior to the mid 1930's. Old logging roads and skid trails are still visible, though most are grown over. Although composition has not been affected, frequency, size and ecological dominance has been changed by the above events in the area, but due to lack of early data, differences cannot be expressed quantitatively.

#### EARLY FAUNA

Game and predators were the major wildlife forms described by early travelers. The Tuscarawas River was called Elk Eye Creek by the Indians. Diary accounts of travel from Sandusky to Pittsburg reveal that, within 40 miles of the study area, deer (*Odocoileus virginianus*), bear (*Ursus americanus*), elk (*Cervus canadensis*), and beaver (*Castor canadensis*), were taken (Taylor, 1954: 125). The buffalo (*Bison bison*) had disappeared prior to 1800, as had the elk. Panthers (*Felis concolor*) were seen around 1800. Bears abounded as late as 1845 (Mansfield, 1884: 332).

Deer apparently were abundant and occurred in herds. Heckewelder and another man in 1789 rode horseback across the river flats one day's ride out of the present-day community of Bolivar (north of the study area) "where the deer went before them" (Wallace, 1958: 246). Deer remained abundant longer than all of the other big game animals. Mansfield (1884), commenting about earlier times, said that it was a poor hunter who did not get a deer after hunting an hour.

There were several stories of wolves (*Canis lupus*) chasing men, one near Zoar (Anon., 1875: 18, 21). In 1808, Tuscarawas County commissioners placed bounties on wolves (Anon., 1875: 18). Mansfield (1884: 332) reported that wolves were in great abundance. He stated (1884: 337) that "as late as 1842 an organized wolf hunt took place among the Zoar hills [northwest of the study area] at which seven wolves were killed."

Wild animal populations were harvested from the area for meat and hides. Deer skins were used for clothing and bear skins were used for bed coverings (Anon., 1875: 19), as were blankets made of beaver and raccoon skins (*Procyon lotor*) (Wallace, 1958: 52). Mansfield (1884: 332) summarized the wildlife of Tuscarawas county in its days of settlement. Raccoons and woodchucks (*Marmota monax*) were found occasionally; gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes fulva*) were plentiful and were hunted; rabbits (*Sylvilagus* sp.) and gray and fox squirrels (*Sciurus carolinensis* and *S. niger*) were abundant, the latter especially after settlement. There were many beavers and otters (*Lutra canadensis*), though the former had disappeared by 1884; otters were still being sought in 1884. Muskrats (*Ondatra zibethica*) were numerous. Wild turkey (*Meleagris gallopavo*) were abundant, but ruffed grouse (*Bonasa umbellus*) had almost disappeared. Wild ducks and geese were abundant. Heckewelder (Wallace, 1958: 65) also wrote that "the ducks were so numerous I frequently brought down five or six at one shot." He reported that blankets were made from wild turkey and goose feathers (Wallace, 1958: 52). Mansfield reported that quail (*Colinus virginianus*), crows (*Corvus brachyrhynchos*), blackbirds, (*Quiscalus*, *Molothrus ater*, *Agelaius*, and others), bluebirds (*Sialis sialis*), and turtle doves (*Zenaidura macoura*), though not native to the wilderness, came soon after settlement. Cranes, woodcock (*Philohela minor*), woodpeckers, and pigeons were plentiful and, "except the first," remained to the time of writing.

Mr. Heid and Mr. Lengler, who worked with loggers in the vicinity of the research area in the 1890's, reported that there were many flying squirrels (*Glaucomys volans*) and gray squirrels then. Hunters never waited for squirrels that "hid themselves," but went on to the next tree. The tails of squirrels killed by Mr. Heid and his brother in a year were tacked in four rows across the end of a 15-ft-wide shanty where they lived. This represented a kill of approximately 180 squirrels by two men. They were not concerned with game laws in those days. One day 10 squirrels were shot from one large oak tree. There were few leaf nests; squirrels lived mostly in tree holes. There were only a few grouse then, and none in the forest. There were no deer or bobcats (*Lynx rufus*). Deer have reappeared only in recent years. There were many raccoons, woodchucks, shunks (*Mephitis mephitis*) and opossums (*Didelphis virginianus*), but only a few chipmunks (*Tamias*). There were rabbits in the forest. Fox tracks were common in the snow. In the opinion of Mr. Lengler, there was more hunting in the past than now. Except in the swamp, mosquitoes and flies were not particularly annoying. Mr. Lengler reported that many wild dogs roamed the area. Wild turkeys disappeared from the area one generation before Mr. Lengler's youth (approximately 1825). His grandfather told him of their abundance: "You'd just go on the hill and shoot one."

#### EARLY HUMAN INFLUENCE

The mound-builders were the pre-historic residents of the county and later, when early white travelers arrived, ". . . the Delawares occupied the valley of

the Muskingum and thence to Lake Erie and the River Ohio, asserting a possession over about one-half of the state; . . ." (Taylor, 1954: 38). Mingoes and Delawares lived in the county; Tuscarora (now Bolivar) was once the capital of the Delaware nation. Indians lived in the county until about 1845.

The first white residents of Tuscarawas County were Moravian missionaries who worked in three Indian Villages south of New Philadelphia in 1761 and 1762 (Anon., 1875: 18). Pioneers grubbed out the underbrush and deadened timber by girdling and burning to make farm land. In 1825, a charcoal furnace at Zoar (3 miles northwest of the study area) "swept away large tracts of timber" (Anon., 1875: 20½). Occupations of the early county residents were, in decreasing order of abundance: farmers, carpenters, tanners, stock raisers, salt manufacturers, and saw mill operators (Anon., 1875: 79). These people had strong effects on the plant communities and, consequently, also on the animal populations; their dependence upon game for food also had major ecological effects.

#### SUMMARY

The early natural history of this small area has been described in order to aid the work of later researchers on the area and to assist in the proper interpretation of future findings from the area. Floral species composition of the area within the past century has not been drastically changed, although frequency, size, and ecological dominance have been changed by events in the area. Faunal changes both in species and abundance have occurred due to major changes in use of land and to hunting. This history provides an introduction to the major floral, faunal, and human factors that have interacted to have allowed past events to occur and that have resulted in the present nature of the area which has been undisturbed for 15 years. It is hoped that this study may increase the historical perspective of later ecological workers who will grapple with problems of prediction based on the past and will examine ecological phenomena not only on the basis of present factors but also on the bases of origins, seed sources, past catastrophies, and successional developments.

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